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November 24, 2014

The Honorable Steve Mihalchick
Office of Administrative Hearings
P.O. Box 64620
St. Paul, MN 55164-0620

**Re: In the Matter of the Petition of Hutchinson Telecommunications Inc.
for Arbitration of Interconnection Agreements with CenturyLink
under 47 U.S.C. § 252(b)
MPUC Docket No. P-421, 5561, 430/IC-14-189
OAH Docket No. 48-2500-31383**

Dear Judge Mihalchick:

Enclosed for filing is the Supplemental Testimony of William R. Easton regarding the above-referenced matter.

Very truly yours,

/s/ Jason D. Topp

Jason D. Topp

JDT/bardm

Enclosures

cc: Service List

**BEFORE THE MINNESOTA OFFICE OF ADMINISTRATIVE HEARINGS
FOR THE MINNESOTA PUBLIC UTILITIES COMMISSION**

Beverly Jones Heydinger	Chair
David Boyd	Commissioner
Nancy Lange	Commissioner
Dan Lipschultz	Commissioner
Betsy Wergin	Commissioner

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AFFIDAVIT OF SERVICE

STATE OF MINNESOTA)
) ss
COUNTY OF HENNEPIN)

Dianne Barthel hereby certifies that on the 24th day of November, 2014, she e-filed a true and correct copy of the Supplemental Testimony of William R. Easton by posting it on www.edockets.state.mn.us. Said document was also served on the service list via U.S. mail and e-mail as designated with the Minnesota Public Utilities Commission.

/s/ Dianne Barthel
Dianne Barthel

Subscribed and sworn to before me
this 24th day of November, 2014.

/s/ LeAnn M. Cammarata
Notary Public

My Commission Expires Jan 31, 2020

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Julia	Anderson	Julia.Anderson@ag.state.mn.us	Office of the Attorney General-DOC	1800 BRM Tower 445 Minnesota St St. Paul, MN 551012134	Electronic Service	Yes	OFF_SL_14-189_Official CC Service List
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Jason	Topp	jason.topp@centurylink.com	CenturyLink	200 S 5th St Ste 2200 Minneapolis, MN 55402	Electronic Service	Yes	OFF_SL_14-189_Official CC Service List

**BEFORE THE MINNESOTA OFFICE OF ADMINISTRATIVE HEARINGS
600 North Robert Street
St. Paul, Minnesota 55101**

**FOR THE MINNESOTA PUBLIC UTILITIES COMMISSION
121 Seventh Place East, Suite 350
St. Paul, Minnesota 55101-2147**

Beverly Jones Heydinger	Chair
David Boyd	Commissioner
Nancy Lange	Commissioner
Dan Lipschultz	Commissioner
Betsy Wergin	Commissioner

In the Matter of the Petition of Hutchinson)	PUC Docket No. P-421, 5561, 430/IC-14-189
Telecommunications, Inc. for Arbitration)	
with Embarq Minnesota, Inc., Pursuant to)	OAH Docket No. 48-2500-31383
47 U.S.C. Section 252 of the Federal)	
Telecommunications Act)	

Embarq Minnesota Inc. d/b/a CenturyLink EQ

SUPPLEMENTAL TESTIMONY OF WILLIAM R. EASTON

NOVEMBER 24, 2014

1 **Q. PLEASE STATE YOUR NAME, OCCUPATION AND BUSINESS**
2 **ADDRESS.**

3 A. My name is William R. Easton. I am a Wholesale Staff Director at CenturyLink
4 Inc. ("CenturyLink"), the corporate parent of Embarq Minnesota Inc. dba
5 CenturyLink EQ ("CenturyLink EQ"). My business address is 1600 7th Avenue,
6 Seattle, Washington.

7
8 **Q. ARE YOU THE SAME WILLIAM EASTON WHO FILED DIRECT AND**
9 **REBUTTAL TESTIMONY IN THIS PROCEEDING?**

10 A. Yes.

11
12 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

13 A. Consist with Judge Mihalchick's November 17th Order, the purpose of this
14 testimony is to describe differences in the transport of calls between
15 CenturyLink EQ customers in the Glencoe exchange and calls which involve a
16 Hutchinson ("HTI") customer.

17
18 **Q. PLEASE PROVIDE SOME BACKGROUND ON THIS ISSUE?**

19 A. This issue was first raised in the Surrebuttal Testimony of Department of
20 Commerce witness Katherine Doherty which was filed on the day of the hearing in
21 this proceeding. In her testimony, Ms. Doherty states:

22 It is the way in which *CenturyLink* has configured its network, with a host
23 switch at the Osseo tandem and a distant remote office in Glencoe, that
24 dictates the transport costs in the HTI-CenturyLink case. When
25 CenturyLink Customer A in Glencoe places a local call to CenturyLink

1 customer B in Glencoe, the call must be transported over CenturyLink's
2 existing facilities from the Glencoe central office to the Osseo tandem
3 switch, and then back over the existing facilities to Customer B in
4 Glencoe. When CenturyLink customer A places a call to HTC customer
5 C, the call is transported in the same way – from customer A to the
6 Glencoe central office and then back to the HTI POI at or near the
7 Glencoe central office. Regardless of whether an HTI customer in
8 Glencoe calls a CenturyLink customer in Glencoe, a CenturyLink
9 customer in Glencoe calls an HTI customer in Glencoe, or whether a
10 Glencoe CenturyLink customer calls another CenturyLink customer, the
11 traffic must be transported from Glencoe to the Osseo tandem and back to
12 Glencoe.¹
13

14 **Q. TO HELP UNDERSTAND THIS ROUTING ISSUE, PLEASE DESCRIBE**
15 **THE FUNDAMENTAL FUNCTION OF A SWITCH AND HOW IT**
16 **ACCOMPLISHES THIS FUNCTION?**

17 A. The function of an end office switch is to connect voice calls between customers of
18 telecommunications service. This is accomplished through the lines that connect
19 customers' phones with an end office switch and trunks that are used to connect the
20 end office switch with other switches. An end office switch connects lines to lines
21 and lines to trunks. Calls between customers who are connected to the same switch
22 use the end office switch function of a line to line connection. Calls between
23 customers' lines that are connected to different interconnected end office switches
24 use the switch function of a line to trunk connection.

25
26 **Q. HOW DOES A HOST/REMOTE SWITCH CONFIGURATION WORK AND**
27 **WHAT IS ITS PURPOSE?**

¹ Doherty Surrebuttal Testimony, p. 5.

1 A. A host/remote switch configuration is a switching arrangement where the end office
2 switch processing takes place in one location (the host) and the line interface
3 module (remote switching unit) is located in a geographically distant location. This
4 configuration allows a single end office switch processor to serve one or more
5 distant small communities without the need to extend each customer's line over a
6 long distance to that end office switch. It also provides these smaller communities
7 with the benefits of the features of end office switches that serve much larger
8 communities. In this type of arrangement, customer lines are connected to a remote
9 switch (line interface module) which is then connected via an umbilical to the
10 distant host switch. When two customers in a community are served by the same
11 service provider, typically they are connected with lines to the same remote switch.
12 Calls between these customers use the remote switch function of a line to line
13 connection without the need to transport the calls back to the host. However, when
14 the calling and called parties use different switch based service providers, a line to
15 trunk connection is required to complete the call and the call must be transported
16 back to the host where the trunk connection between the two service providers'
17 switches physically takes place.

18
19 **Q. HAS MS. DOHERTY ACCURATELY DESCRIBED HOW CALLS ARE**
20 **ROUTED BETWEEN THE GLENCOE REMOTE AND OSSEO HOST**
21 **SWITCH?**

1 A. No. The routing described by Ms. Doherty does not reflect how routing occurs in
2 the host/remote switch configuration that I just discussed. There is a critical
3 difference in how a call is routed between two CenturyLink EQ Glencoe customers
4 and how a call would be routed between a CenturyLink EQ and an HTI customer in
5 Glencoe. For calls between CenturyLink customers in Glencoe, the call is *not*
6 routed back to the Osseo host. These line to line connections between CenturyLink
7 customers in Glencoe are switched in the CenturyLink EQ Glencoe remote switch.²

8
9 By contrast, calls between an HTI customer in Glencoe and a CenturyLink EQ
10 customer in Glencoe would require that the call be physically transported back to
11 Osseo because it is at the Osseo host office that the trunk connection between the
12 two companies' switches physically takes place.³ For each call between an HTI
13 customer in Glencoe and a CenturyLink EQ customer in Glencoe, two voice paths
14 must be established between the Glencoe remote and the Osseo host locations, one
15 from Glencoe to Osseo and another from Osseo to Glencoe.⁴ No such voice paths
16 are established when there is a call between two CenturyLink EQ customers in
17 Glencoe.⁵

18

² See Exhibit WRE-7A.

³ See Exhibit WRE-7B.

⁴ This assumes that HTI's intention remains to establish a presence in the Glencoe central office as a method to interconnect with the Osseo host switch.

⁵ See Exhibit WRE-7A.

1 **Q. IS THERE COMMUNICATION BETWEEN THE HOST AND REMOTE**
2 **SWITCH WHEN TWO CENTURYLINK EQ CUSTOMERS IN GLENCOE**
3 **CALL EACH OTHER?**

4 A. Yes. There is communication over the data links which connect the host and
5 remote switch for these calls. This is necessary to allow for the provision of certain
6 non-essential central office features (e.g. Calling Name Caller ID), but the calls
7 themselves are not routed back to the host switch and the voice paths discussed
8 above need not be established.

9
10 **Q. IS THERE A BENEFIT IN ROUTING CALLS THIS WAY?**

11 A. Yes. In the unlikely event that the umbilical between the Glencoe remote and the
12 Osseo host is severed, the remote switch will continue to perform the switch
13 function that connects lines to lines. This allows the uninterrupted communication
14 capability between CenturyLink EQ customers in Glencoe. Only the non-essential
15 data link would be lost.

16
17 **Q. IS CENTURYLINK EQ'S HOST/REMOTE CONFIGURATION**
18 **CONSISTENT WITH INDUSTRY PRACTICE?**

19 A. Yes. Providers often use a centralized host switch with remote switches located
20 close to concentrations of users. This host/remote configuration is designed to
21 provide the most efficient way to serve remote/rural customers.⁶ Like the

⁶ See also Telcordia Technologies GR-532-CORE, Issue 1, June 2000 (Formerly TR-TSY-000532, Issue 2 July 1987) LSSGR: Remote Switching Units (FSD 30-23-0000) A Module of LSSGR, FR-64, section 1.2 Background.

1 CenturyLink EQ host/remote arrangement, when other service providers use these
2 host/remote arrangements, the remotes perform the line to line connections while
3 the hosts are typically relied upon to connect lines to trunks.

4
5 **Q. DO YOU HAVE A DIAGRAM WHICH DEPICTS THE DIFFERENCES IN**
6 **CALL FLOWS BETWEEN TWO CENTURYLINK EQ GLENCOE**
7 **CUSTOMERS AND BETWEEN AN HTI GLENCOE CUSTOMER AND A**
8 **CENTURYLINK EQ CUSTOMER?**

9 A. Yes. Attached as Exhibit WRE-7 is a diagram depicting the different call flows.
10 WRE-7A depicts the call flow between two CenturyLink EQ Glencoe customers
11 and exhibit WRE-7B depicts the call flow between an HTI Glencoe customer and a
12 CenturyLink EQ Glencoe customer. As depicted in the diagrams, calls between
13 two CenturyLink EQ customers use line to line connections within the Glencoe
14 remote, while the call between an HTI Glencoe customer and a CenturyLink EQ
15 Glencoe customer must be transported to the Osseo host since it requires a line to
16 trunk connection.

17
18 **Q. AT PAGES 20-21 OF THE DEPARTMENT OF COMMERCE'S POST**
19 **HEARING BRIEF, THE DEPARTMENT DISTINGUISHES THE**
20 **CHARTER CASE FROM THIS PROCEEDING. IS THAT DISTINCTION**
21 **VALID?**

22 A. No. The Department argues that this case is different from the Charter case because
23 in Charter, CenturyLink was required to route Charter calls in a manner different

1 from the way it routes its own calls. The Department makes this argument based on
2 the mistaken impression that “Regardless of whether an HTI customer in Glencoe
3 calls a CenturyLink customer in Glencoe, a CenturyLink customer in Glencoe calls
4 an HTI customer in Glencoe, *or whether a Glencoe CenturyLink customer calls*
5 *another Glencoe CenturyLink customer*, the traffic must be transported from
6 Glencoe to the Osseo tandem and back to Glencoe.”⁷ As my testimony
7 demonstrates, the Department’s understanding is incorrect and in fact, HTI’s
8 request here requires routing that is not necessary when a Glencoe CenturyLink
9 customer calls another Glencoe CenturyLink EQ customer. Thus, the HTI
10 interconnection request is similar to Charter’s interconnection request.

11
12 **Q. IS THIS TESTIMONY INCONSISTENT WITH YOUR DIRECT**
13 **TESTIMONY?**

14 **A.** No. In my Direct Testimony, I stated:

15 Hutchinson seeks to connect with CenturyLink EQ at Glencoe, Minnesota,
16 in a remote central office. A remote central office contains no intelligent
17 switching equipment and instead provides line side connections for
18 customer loops and an umbilical connection to a host switch, where all of
19 the switching activity takes place. In this case, the host switch for Glencoe
20 is located in Osseo, Minnesota, approximately 44 miles away.⁸

21 A call between a Glencoe CenturyLink customer and another Glencoe CenturyLink
22 customer uses a line side connection. Therefore, the call can be completed without
23 being routed back to the Osseo host office.

24
⁷ Department of Commerce Post Hearing Brief, p. 21 (emphasis in original).

⁸ Ex. 1 (Easton Direct), 48:31-49:4.

1 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

2 **A. Yes.**

VERIFICATION

I, William R. Easton, Wholesale Staff Director for Embarq Minnesota, Inc. dba CenturyLink EQ, state that I have first-hand knowledge of the matters set forth above and hereby verify that, to the best of my knowledge and belief, the allegations and statements contained herein are true and correct.

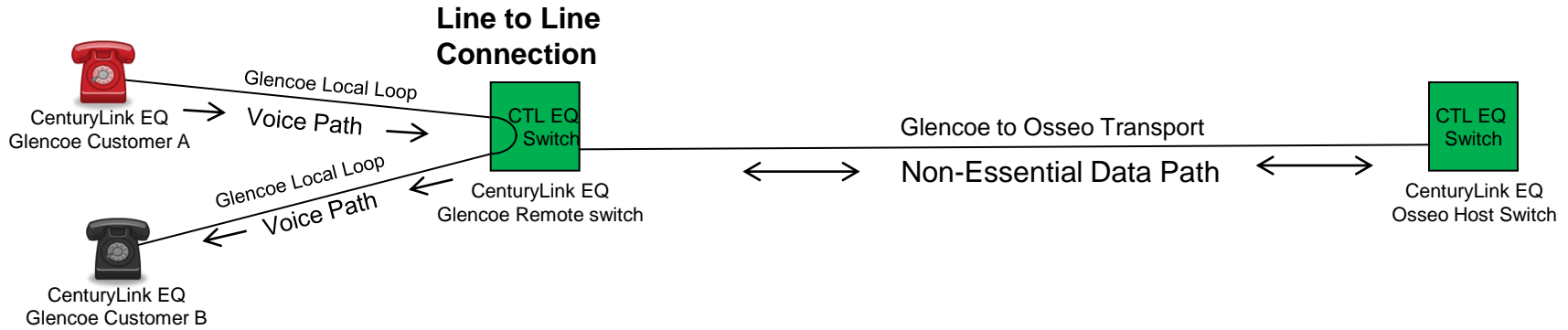
Dated: November 24, 2014



William R. Easton

CenturyLink Glencoe Customer to CenturyLink Glencoe Customer Call Flow

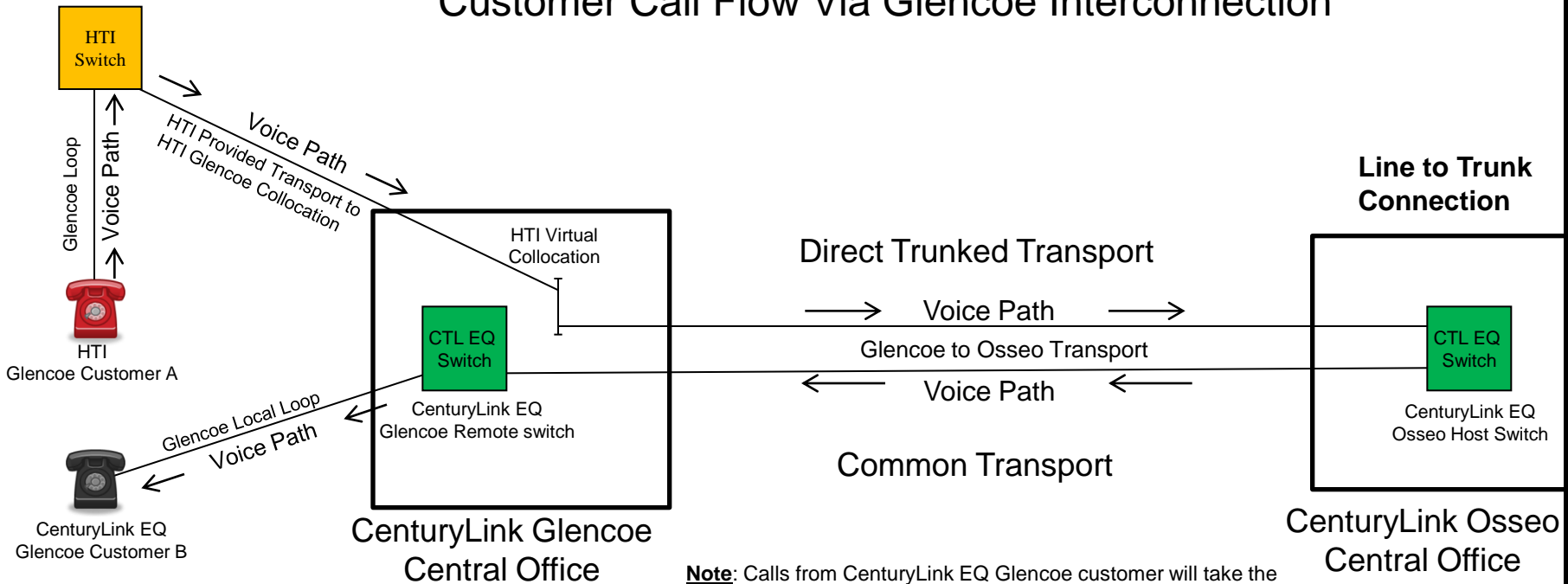
A



HTI Glencoe Customer to CenturyLink Glencoe Customer Call Flow Via Glencoe Interconnection

B

Line to Trunk Connection



Note: Calls from CenturyLink EQ Glencoe customer will take the same call path to HTI Glencoe Customer, only the reverse direction